

Claims

What is claimed is:

1. A method of providing replacement functions for a set of system
5 services, comprising:
requesting a primitive function from one of the set of system services,
the primitive function replicating the one of the set of system services with
reduced functionality; and
sending an identifier associated with the requested primitive function
10 from the one of the set of system services.
2. The method as recited in claim 1, wherein sending the identifier
associated with the requested primitive function is performed only when the
one of the set of system services performs a debugging function.
- 15 3. The method as recited in claim 1, wherein sending the identifier
associated with the requested primitive function is performed only when the
one of the set of system services performs at least one of an input and an
output function.
- 20 4. A method of providing replacement functions for a stack of system
services, the stack of system services including one or more layers, each layer
representing one of the system services, wherein lower layers provide services
to upper layers in the stack, the method comprising:
25 sending a primitive function request down to one of the layers in the
stack, the primitive function replicating the system service associated with the
one of the layers in the stack;
when the one of the layers is responsible for performing at least one of
input and output, returning a primitive function identifier associated with the
30 primitive function.

5. The method as recited in claim 4, further comprising:
when the one of the layers is responsible for performing at least one of input and output, sending another primitive function request from the one of the layers in the stack to a lower layer in the stack.

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6. The method as recited in claim 4, further comprising:
propagating the primitive function request down the one or more layers of the stack of system services.

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7. A method of providing replacement functions for a stack of system services, the stack of system services including one or more layers, each layer representing one of the system services, wherein lower layers provide services to upper layers in the stack, the method comprising:

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sending a primitive function request down from a first one of the layers in the stack to a second one of the layers in the stack, the primitive function replicating the system service associated with the second one of the layers in the stack;

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returning primitive function information associated with the primitive function to the first one of the layers; and

storing the primitive function information to enable the first one of the layers in the stack to communicate with the second one of the layers in the stack.

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8. The method as recited in claim 7, wherein the primitive function information includes a pointer to the primitive function.

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9. The method as recited in claim 7, wherein the primitive function information includes state information data to be provided to the primitive function when the primitive function is called.

10. The method as recited in claim 7, further comprising:
repeating the sending, returning, and storing steps over multiple layers
of the stack such that a stack of primitive mechanisms parallel to the stack of
system services is assembled.

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11. The method as recited in claim 7, wherein the returning and storing
steps are performed when the second one of the layers in the stack contributes
to at least one of input and output.

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12. The method as recited in claim 7, wherein the returning and storing
steps are performed when the second one of the layers in the stack contributes
to debugging functions.

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13. A system for providing replacement system functions, comprising:
a set of components providing a set of services;
a set of primitive functions associated with the set of services, the set
of primitive functions replicating the set of services with reduced

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functionality; and
a primitive function request mechanism adapted for returning one or
more identifiers associated with one or more of the set of primitive functions.

14. The system as recited in claim 13, further comprising:

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a primitive function calling mechanism adapted for calling one or more
primitive functions associated with the one or more identifiers returned by the
primitive function request mechanism.

15. The system as recited in claim 14, wherein the primitive function
calling mechanism is associated with one or more of the set of components.

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16. The system as recited in claim 13, wherein the one or more of the set of primitive functions replace one or more of the set of services when the set of services are determined to be inoperative.

5 17. The system as recited in claim 13, wherein the one or more identifiers associated with one or more of the set of primitive functions are returned in response to a primitive function request.

10 18. The system as recited in claim 13, further comprising:
state information associated with each of the set of components, the state information including data that enables the corresponding service to communicate with another one of the set of services.

15 19. The system as recited in claim 13, further comprising:
state information associated with each of the set of components, the state information including data that enables the corresponding primitive function to identify another one of the set of primitive functions with which to communicate.

20 20. The system as recited in claim 13, wherein the set of services and the set of primitive functions provide input and output functionality.

25 21. The system as recited in claim 13, wherein the set of services and the set of primitive functions provide keyboard functionality.

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22. A computer-readable medium for providing replacement functions for a set of system services, the computer-readable medium storing instructions thereon, comprising:

5 instructions for requesting a primitive function from one of the set of system services, the primitive function replicating the one of the set of system services with reduced functionality; and

instructions for sending an identifier associated with the requested primitive function from the one of the set of system services.

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